

REMARKS

The claims of this application have been amended to make it more clear that it is the insulating ceramic compact as a whole, after firing, which contains the recited crystal phases. It is respectfully submitted that this has not changed the scope of the claims but is made only for clarity.

All of the claims were rejected under 35 U.S.C. 103 over Kimura. This rejection is respectfully traversed.

The present invention is based on the discovery that an insulating ceramic compact formed of a fired mixture of a spinel based ceramic and a borosilicate glass is improved when at least one of a $\text{Mg}_3\text{B}_2\text{O}_6$ or $\text{Mg}_2\text{B}_2\text{O}_5$, or both, are present as primary crystal phases. Such an insulating ceramic compact has a low relative dielectric constant, superior high frequency characteristics and a high coefficient of thermal expansion.

The Kimura reference has a disclosure which is sufficiently broad as to encompass a mixture of borosilicate glass and spinel. The rejection is clearly based on the assumption that the various crystal forms set forth in the claims would be created when the Kimura mixture is sintered. This assumption is required because there is neither a teaching nor the slightest hint about the possibility of a $\text{Mg}_3\text{B}_2\text{O}_6$ or $\text{Mg}_2\text{B}_2\text{O}_5$ crystal phase being present in Kimura. The Office Action does not propose any basis from which it can be concluded that the assumption is correct, and thus fails to provide a prima facie basis for the rejection.

The present application points out on page 5 that the desired crystal phases are achieved by appropriately adjusting the ratio of the magnesium oxide and the boron oxide which are contained in the borosilicate glass. The fact that the desired crystal phases are not achieved when the ratio is incorrect is demonstrated in the working examples. Thus, an inappropriate ratio is present in glasses Q and R and the Examiner will note that the desired crystal phases are not present when such glasses are employed (see the data for numbers 25 and 26 in Table 2 on page 15).

The Kimura patent teaches that the borosilicate in glass employed can be one of seven (7) general types of glass of which only one (1) potentially contains Mg. As to that one subcategory of borosilicate glasses, it need not contain Mg but could contain one of 4 other elements. The reference also teaches that the ceramic filler need not be spinel but also could be one of ten other possibilities. There is nothing in this reference which would lead one skilled in the art to select spinel as the ceramic filler and to select a magnesium-containing borosilicate glass as the glass and further to select a borosilicate having the appropriate ratio of Mg and B and then firing such a combination. The reference further provides no basis for arguing that one skilled in the art would be motivated to make these choices.

In light of the foregoing considerations, it is respectfully submitted that the Kimura patent does not render the claimed invention obvious and the rejection should be withdrawn.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. According, the Examiner is

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respectfully requested to pass this application to issue.

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Respectfully submitted,

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